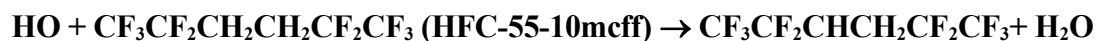


## IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation - Data Sheet oFOx82; VII.A1.11

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The citation for the preferred values in this data sheet is: IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation, <http://iupac.pole-ether.fr>.

This datasheet last evaluated: June 2015; last change in preferred values: June 2009.



### Rate coefficient data (*k*)

<i>k</i> /cm <sup>3</sup> molecule <sup>-1</sup> s <sup>-1</sup>	<i>T</i> /K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(7.87 \pm 0.38) \times 10^{-15}$	295	Nelson et al. (1995)	DF-LIF (a)

### Comments

- (a) HO radicals were produced by the reaction of H atoms with NO<sub>2</sub>. Experiments were performed in 1.6-2.7 Torr (2.1-3.6 mbar) of helium diluent.

### Preferred Values

Parameter	Value	<i>T</i> /K
<i>k</i>	$8.3 \times 10^{-15} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	298
<i>Reliability</i>		
$\Delta \log k$	0.15	298

### Comments on Preferred Values

Nelson et al. measured  $k(\text{HO} + \text{CF}_3\text{CF}_2\text{CH}_2\text{CH}_2\text{CF}_2\text{CF}_3) = (7.87 \pm 0.38) \times 10^{-15} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$  at 295 K. Using an activation energy estimated to be 3.2 kcal mol<sup>-1</sup> (13.4 kJ mol<sup>-1</sup>), Nelson et al. derived a value of  $k(\text{HO} + \text{CF}_3\text{CF}_2\text{CH}_2\text{CH}_2\text{CF}_2\text{CF}_3) = (8.3 \pm 0.9) \times 10^{-15} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$  at 298 K which is our recommendation.

### References

Nelson Jr., D.D., Zahniser, M.S, Kolb, C.E, and Magid, H.: J. Phys. Chem., 99 16301, 1995.